



# Engineering Services Monthly Report

## City Council Meeting: November 4, 2014

Welcome to the City of Frisco Engineering Services Department monthly report.

This report provides a brief status of current roadway, traffic signal, arterial lighting, water and wastewater, and drainage capital projects. The status provides approximate schedules and costs. The report also includes highlights of various activities of the traffic division. The development review division maintains a full workload in support of new private projects. Their activity is reflected in the monthly report for Development Services.

Our department's core functional areas include:

**Capital Project Delivery** – Administration of the city's bond funded projects related to new roads, drainage, traffic signals, roadway median lighting, water distribution, and wastewater collection.

**Development Review** – Construction plan review and field inspection of infrastructure that is built by private development and accepted by the City of Frisco.

**Traffic Operations** – Operation and maintenance of the city's traffic signal system, school zone and pedestrian safety, and special events.

Our staff is committed to resident focus and good stewardship of the city's resources. Our vision is to deliver the highest quality infrastructure and level of service for present and future residents of Frisco.

Please feel free to contact us with questions or comments.

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## Roadway Projects

### **FM 423 [North] (CIP03-0056)** Eldorado Parkway to US 380 [TxDOT]

**Project Manager:** Matthew Phillips

**Description:** Replace the existing two-lane asphalt roadway with a six-lane divided concrete roadway. Project includes paving, drainage, signals and lighting.

**Status:** Construction began in October 2014.

**Schedule:** Construction is anticipated to be complete in Q1 (Jan-Mar) 2017.

**Budget:** \$28,400,000

**City Funding:** No cost to City of Frisco

**Other Funding:** \$28,400,000 (Texas Department of Transportation)

### **Stonebrook Parkway (CIP05-0015)** Dallas Parkway to SH 289 [Preston Road]

**Project Manager:** Art Hartle

**Description:** Install 36 inch water transmission line along DNT from south of Lebanon to Stonebrook, then along Stonebrook from DNT to Preston; reconstruct westbound Stonebrook pavement to widen roadway to 6 lanes. The 5<sup>th</sup> and 6<sup>th</sup> lanes on Stonebrook Parkway from Dallas Parkway to the west to Longhorn Trail are under construction and will be completed with the rest of the project.

**Status:** Construction is approximately 90% complete.

**Schedule:** Construction is anticipated to be complete in Q4 (Oct-Dec) 2014.

**Budget:** \$12,125,000

**City Funding:** \$12,125,000

**Other Funding:** No other funding

### **Stonebrook Parkway (CIP10-0024)** Fighting Eagles to Longhorn Trail

**Project Manager:** David L. Chacon

**Description:** Construct a new six-lane divided concrete roadway including underpass beneath the BNSF Railroad. Project includes paving, drainage, water, wastewater, sidewalk, lighting, landscaping and irrigation. This project will complete the connection of Stonebrook Parkway between FM 423 and the DNT.

**Status:** Construction is approximately 80% complete.

**Schedule:** Construction is anticipated to be complete in Q2 (Apr-June) 2015.

**Budget:** \$15,750,000

**City Funding:** \$6,150,000

**Other Funding:** \$9,600,000 (Texas Department of Transportation and the North Central Texas Council of Governments)

### **Memorial Drive (CIP11-0016)** Navaho Lane to Spring Creek Pkwy [The Colony]

**Project Manager:** Jason Brodigan

**Description:** Construction of a new four-lane divided concrete roadway, a bridge under the BNSF Railroad, and the intersection with Town & Country. Project includes paving, drainage, retaining wall, sidewalk, a new traffic signal, lighting, landscaping and irrigation.

**Status:** Construction is approximately 75% complete. Spring Creek Parkway and Town & Country are currently closed to through traffic for construction. Both roads are expected to reopen in Q4 (Oct-Dec) 2014.

**Schedule:** Construction is anticipated to be complete in Q1 (Jan-Mar) 2015.

**Budget:** \$14,834,000

**City Funding:** \$0

**Other Funding:** \$14,834,000 (Denton County and The Colony)

**Lebanon – DNT Intersection Improvements (CIP05-0026)****Project Manager:** Art Hartle**Description:** Build-out of all lanes at intersection.**Status:** Design is approximately 95% complete.**Schedule:** Construction is anticipated to begin in Q3 (July-Sept) 2015.**Budget:** \$2,120,000**City Funding:** \$2,120,000**Other Funding:** No other funding**Preston Road Intersection Improvements (CIP11-0006) SH 121 to Main St****Project Manager:** Matthew Phillips**Description:** Construct additional turn lanes at intersections (Warren, Lebanon, Wade, Rolater, and Main) on Preston Rd between SH 121 and Main St.**Status:** Design is approximately 60% complete**Schedule:** Construction is anticipated to begin in Q3 (July-Sept) 2015.**Budget:** \$4,500,000**City Funding:** \$600,000**Other Funding:** \$3,900,000 (Texas Department of Transportation)**Preston Rd (SH 289) Landscape (CIP10-0027) Main St to US 380 [TxDOT]****Project Manager:** Jason Brodigan**Description:** Install median landscaping.**Status:** Construction, by TxDOT, began in September.**Schedule:** Construction is anticipated to be complete in Q2 (Apr-June) 2015.**Budget:** \$380,000**City Funding:** No cost to City of Frisco.**Other Funding:** \$380,000 (Texas Department of Transportation)**Panther Creek Parkway (CIP11-0026) Honey Grove to Coit****Project Manager:** Tin Nguyen**Description:** Construct two lanes (south side) of Panther Creek Parkway from Honey Grove Drive east, approximately 2700 linear feet, to Coit Road and including the Panther Creek Parkway/Coit Road intersection. Project includes paving, drainage, water and wastewater lines to support adjacent development. Project will be constructed with Coit Road (CIP11-0024).**Status:** Construction is approximately 60% complete. Panther Creek is currently closed between Honey Grove and Coit Road for construction. The road is expected to be closed until the completion of the project.**Schedule:** Construction is anticipated to be complete in Q1 (Jan-Mar) 2015.**Budget:** \$900,000**City Funding:** \$900,000**Other Funding:** No other funding**Coit Rd (CIP11-0024) Country Ridge to Panther Creek Pkwy****Project Manager:** Tin Nguyen**Description:** Construct two lanes (west side) of Coit Road, including the median, from Buckeye Drive north, approximately 2700 linear feet, to Panther Creek Parkway. Project includes paving, drainage, water and wastewater lines to support adjacent development.**Status:** Construction is approximately 60% complete.**Schedule:** Construction is anticipated to be complete in Q1 (Jan-Mar) 2015.**Budget:** \$1,500,000**City Funding:** \$750,000**Other Funding:** \$750,000 (Collin County)

**Coit Road (CIP10-0002)** Main Street to Eldorado Parkway

**Project Manager:** Jason Brodigan

**Description:** Replace the existing two-lane asphalt roadway with a four-lane divided concrete roadway. Project includes paving, drainage, water transmission line, lighting, landscaping and irrigation.

**Status:** Contractor is working on punch list items prior to final acceptance.

**Schedule:** Construction is anticipated to be complete in November 2014.

**Budget:** \$7,000,000 including road and waterline.

**City Funding:** \$3,900,000

**Other Funding:** \$3,100,000 (Collin County)

**Rockhill Parkway (CIP08-0007)** CR 26 to Dallas Parkway

**Project Manager:** Matthew Phillips

**Description:** Construct a new six-lane divided concrete roadway. Project includes paving, bridge, retaining walls, drainage, water transmission line, lighting, landscaping and irrigation.

**Status:** Construction is approximately 35% complete.

**Schedule:** Construction is anticipated to be complete in Q3 (July-Sept) 2015.

**Budget:** \$8,940,000 including water line.

**City Funding:** \$5,140,000

**Other Funding:** \$3,800,000 (Collin County)

**Rockhill Parkway (CIP10-0015)** Dallas Parkway to Preston Rd

**Project Manager:** Matthew Phillips

**Description:** Construct a new six-lane divided concrete roadway. Project includes paving, bridge, retaining walls, drainage, water transmission line, lighting, landscaping and irrigation.

**Status:** Construction is approximately 35% complete.

**Schedule:** Construction is anticipated to be complete in Q3 (July-Sept) 2015.

**Budget:** \$20,500,000 including water line.

**City Funding:** \$11,000,000

**Other Funding:** \$9,500,000 (Collin County)

**Custer Road [FM 2478] (CIP10-0018)** SH 121 to Stonebridge

**Project Manager:** Matthew Phillips

**Description:** Widen existing 4 lane divided roadway to 6 lanes. Project includes paving, bridge widening, signal modifications and illumination.

**Status:** Design is approximately 60% complete.

**Schedule:** Construction is anticipated to begin in Q3 (July-Sept) 2015.

**Budget:** \$6,620,000

**City Funding:** \$820,000

**Other Funding:** \$5,800,000 (Texas Department of Transportation, North Central Texas Council of Governments, and Collin County)

**Main Street [FM 3537] (CIP03-0108)** Preston Road to Custer Road [TxDOT]

**Project Manager:** Matthew Phillips

**Description:** Project includes replacement of the existing two-lane asphalt roadway with a six-lane divided concrete roadway, drainage, signals, roadway lighting, landscaping and irrigation.

**Status:** Construction is approximately 60% complete. Traffic was switched to the new concrete pavement in early October.

**Schedule:** Construction is anticipated to be complete in Q3 (July-Sept) 2015.

**Budget:** \$2,750,000

**City Funding:** \$2,750,000

**Other Funding:** \$27,000,000 (Texas Department of Transportation)

**US 380 (CIP10-0017)** Lovers Ln to Custer Rd [TxDOT]

**Project Manager:** Matthew Phillips

**Description:** Widen the existing five-lane roadway to a six lane divided roadway with median and curb and gutter.

**Status:** Construction began in September 2014, and is approximately 10% complete.

**Schedule:** Construction is anticipated to be complete in Q2 (Apr-June) 2016.

**Budget:** \$19,600,000

**City Funding:** No cost to City of Frisco

**Other Funding:** \$19,600,000 (Texas Department of Transportation)

**US 380 (CIP10-0017)** CR 26 to Lovers Ln [TxDOT]

**Project Manager:** Matthew Phillips

**Description:** Widen the existing five-lane roadway to a freeway section including frontage roads and grade separated intersections at DNT and Preston Road.

**Status:** Design, by TxDOT, is complete. Right of Way acquisition is in progress.

**Schedule:** Construction is anticipated to begin in Q3 (July-Sept) 2015.

**Budget:** \$58,000,000

**City Funding:** No cost to City of Frisco

**Other Funding:** \$58,000,000 (Texas Department of Transportation)

**County Road 26 (CIP13-0007)** Rockhill Road to US 380

**Project Manager:** Matthew Phillips

**Description:** Construction of north-south segment of roadway between Rockhill Parkway and US 380.

**Status:** Design is complete. ROW acquisition is underway.

**Schedule:** Construction is anticipated to begin in Q4 (Oct-Dec) 2015.

**Budget:** \$4,500,000 including water and wastewater lines.

**City Funding:** \$4,500,000

**Other Funding:** No other funding

**Roundabout at Intersection of Warren Parkway and Ohio Drive (CIP13-0015)**

**Project Manager:** Brian Moen

**Description:** Installation of a multi-lane roundabout in lieu of a traffic signal.

**Status:** Design is approximately 30% complete.

**Schedule:** Construction is anticipated to begin in Q1 (Jan-Mar) 2015.

**Budget:** \$365,000

**City Funding:** \$365,000

**Other Funding:** No other funding

**4<sup>th</sup> Army (CIP10-0005)** Lebanon to Stewart Creek Wastewater Treatment Plant

**Project Manager:** David Chacon

**Description:** Construct new connection from Lebanon road to the existing 4<sup>th</sup> Army pavement with concrete pavement and curb and gutter.

**Status:** Design is approximately 60% complete.

**Schedule:** Construction is anticipated to begin in Q2 (Apr-June) 2015.

**Budget:** \$720,000

**City Funding:** \$720,000

**Other Funding:** No other funding

#### **4<sup>th</sup> Army** Stewart Creek Wastewater Treatment Plant to Timber Ridge

**Project Manager:** David Chacon

**Description:** Reconstruct the roadway with concrete pavement and curb and gutter and add bridge structure at Stewart Creek.

**Status:** Design is approximately 30% complete.

**Schedule:** Construction is anticipated to begin in Q4 (Oct-Dec) 2015.

**Budget:** \$8,080,000

**City Funding:** \$8,080,000

**Other Funding:** No other funding

#### **Dallas Parkway (Preliminary Engineering)** SH 121 to Eldorado Parkway

**Project Manager:** Matthew Phillips

**Description:** Prepare preliminary engineering schematic to add an additional lane to the northbound and southbound frontage roads to the Dallas North Tollway.

**Status:** Preliminary engineering is approximately 60% complete.

**Schedule:** Preliminary engineering anticipated to be complete in Q1 (Jan-Mar) 2015.

**Budget:** \$780,000

**City Funding:** \$780,000

**Other Funding:** No other funding

#### **Teel Parkway (CIP14-0003)** Stafford Middle School to Rockhill

**Project Manager:** David Chacon

**Description:** Construction of two lanes of Teel Parkway with concrete pavement and a bridge across the floodplain. The project includes paving, drainage, retaining walls, bridge structure, and illumination.

**Status:** Design is approximately 75% complete.

**Schedule:** Construction anticipated to begin in Q1 (Jan-Mar) 2015.

**Budget:** \$5,500,000

**City Funding:** \$5,000,000

**Other Funding:** \$500,000 (Denton County)

#### **2014 Sidewalk Program (CIP14-0001)**

**Project Manager:** Tin Nguyen

**Description:** Construction of sidewalks and hike and bike trails at various locations to provide walking routes to school and complete gaps in the sidewalk system. The project includes grading, selected sidewalk, hike and bike trail, and barrier free ramps.

**Status:** Construction is approximately 90% complete.

**Schedule:** Construction anticipated to be complete in Q4 (Oct-Dec) 2014.

**Budget:** \$700,000

**City Funding:** \$515,000

**Other Funding:** \$185,000 (Frisco Independent School District, Private Development Escrows)

#### **Warren Parkway (Project # 05162)** Internet Drive to Dallas Parkway (N)

**Project Manager:** Matthew Phillips

**Description:** Construct additional lanes and turn lanes at intersection to align with existing bridge and provide for additional capacity.

**Status:** Design is approximately 90% complete.

**Schedule:** Construction is anticipated to begin in Q2 (Apr-June) 2015.

**Budget:** \$1,200,000

**City Funding:** \$1,200,000

**Other Funding:** No other funding

## Traffic Signal Projects

### **Emergency Traffic Signal - Rolater Road at Proposed Fire Station #8 (CIP13-0013)**

**Project Manager:** Shelley Lang

**Description:** Install an emergency traffic signal on Rolater Road at the Proposed Fire Station #8.

**Status:** Construction is approximately 90% complete.

**Schedule:** Construction is anticipated to be complete in Q4 (Oct-Dec) 2014.

**Budget:** \$112,290

**City Funding:** \$112,290

**Other Funding:** \$0

### **Traffic Signal - Panther Creek Parkway at Grayhawk Boulevard (CIP13-0014)**

**Project Manager:** Curtis Jarecki

**Description:** Install a traffic signal on Panther Creek Parkway at Grayhawk Boulevard.

**Status:** Construction is complete and the new traffic signal was placed into operation on October 30, 2014.

**Schedule:** Completed.

**Budget:** \$200,000

**City Funding:** \$200,000

**Other Funding:** \$0

### **Traffic Signal Modifications – Coit Road at College Parkway (CIP13-0018)**

**Project Manager:** Shelley Lang

**Description:** Modify existing traffic signal to accommodate 4<sup>th</sup> leg being added to the intersection as part of the Richwoods Development.

**Status:** Construction is approximately 95% complete.

**Schedule:** Construction is anticipated to be complete in Q4 (Oct-Dec) 2014.

**Budget:** \$90,450

**City Funding:** \$0

**Other Funding:** \$90,450

### **Traffic Signal – Custer Road at Ridge Creek Parkway (CIP14-0004)**

**Project Manager:** Shelley Lang

**Description:** Install a new traffic signal on Custer Road at Ridge Creek Parkway.

**Status:** Design is approximately 30% complete.

**Schedule:** Construction is anticipated to begin in Q2 (Apr-June) 2015.

**Budget:** \$200,000

**City Funding:** \$0

**Other Funding:** \$200,000

## Water Distribution & Wastewater Collection System Projects

### **West Rowlett Creek WW Main Extension (CIP11-0021)** Independence to Coit

**Project Manager:** David L. Chacon

**Description:** Preliminary engineering alignment for wastewater main from Independence Parkway to Coit Road; alignment study for two additional mains to extend north to Main Street; and decommissioning of three lift stations.

**Status:** Preliminary alignments have been developed.

**Schedule:** Design is anticipated to begin in Q4 (Oct-Dec) 2014.

**Budget:** \$1,750,000

**City Funding:** \$1,750,000

**Other Funding:** No other funding



**North Stewart Creek Interceptor (South) (CIP08-0013)** Stewart Creek WWTP to Stonebrook

**Project Manager:** Art Hartle

**Description:** Install sanitary sewer from Stewart Creek Wastewater Treatment Plant northward to Stonebrook to provide additional capacity for growth in the Stewart Creek drainage basin.

**Status:** Design is 90% complete. ROW acquisition is in progress.

**Schedule:** Construction is anticipated to begin in Q1 (Jan-Mar) 2015.

**Budget:** \$3,900,000

**City Funding:** \$3,900,000

**Other Funding:** No other funding

**North Stewart Creek Interceptor (North)** Stonebrook to Dallas Parkway

**Project Manager:** Art Hartle

**Description:** Install sanitary sewer from Stonebrook to Dallas Parkway to provide additional capacity for growth in the Stewart Creek drainage basin.

**Status:** Design is currently on hold.

**Schedule:** Construction is expected to occur in conjunction with Grand Park construction.

**Budget:** \$3,700,000

**City Funding:** \$3,700,000

**Other Funding:** No other funding

**Panther Creek Reuse Line, Phase 2 (CIP14-0002)** Trails Golf Course to Panther Creek WWTP

**Project Manager:** Art Hartle

**Description:** Extension of reuse line from Panther Creek WWTP south to terminus of existing reuse line at The Trails Golf Course. Interconnects reuse flow from Stewart Creek WWTP & Panther Creek WWTP.

**Status:** Construction began in October 2014.

**Schedule:** Construction is anticipated to be complete in Q2 (Mar-June) 2015.

**Budget:** \$6,720,000

**City Funding:** \$6,720,000

**Other Funding:** No other funding

**Dallas Parkway 20" Waterline (CIP06-0020)** Stonebrook to Main Street

**Project Manager:** David L. Chacon

**Description:** Construction of a 20 inch water line along Dallas Parkway from Stonebrook to Main.

**Status:** Design is approximately 90% complete.

**Schedule:** Construction is anticipated to begin in Q2 (Mar-June) 2015.

**Budget:** \$3,660,000

**City Funding:** \$3,660,000

**Other Funding:** No other funding

**Legacy Elevated Water Storage Tank (CIP10-0019)**

**Project Manager:** Art Hartle

**Description:** Construct new 1.5 million gallon elevated water tank to replace existing 0.3 million gallon EST at the southeast corner of Warren and Legacy.

**Status:** Construction is approximately 95% complete.

**Schedule:** Construction is anticipated to be complete in Q4 (Oct-Dec) 2014. The tank is expected to be filled and put in operation on October 30.

**Budget:** \$4,250,000

**City Funding:** \$4,250,000

**Other Funding:** No other funding



### **Stonebrook Elevated Water Storage Tank (CIP07-0041)**

**Project Manager:** Art Hartle

**Description:** Construct new 2.0 million gallon tank to serve growth on the west side.

**Status:** Design is complete. Right of way acquisition and utility relocation is underway.

**Schedule:** Construction is anticipated to begin in Q1 (Jan-Mar) 2015.

**Budget:** \$4,500,000

**City Funding:** \$4,500,000

**Other Funding:** No other funding

### **Gaylord – DNT Wastewater System Capacity Improvements (CIP12-0005)**

**Project Manager:** David L. Chacon

**Description:** Increase capacity to serve existing multi-use development and future development at northwest corner of Warren and DNT.

**Status:** Construction is approximately 40% complete.

**Schedule:** Construction is anticipated to be complete in Q1 (Jan-Mar) 2015.

**Budget:** \$4,761,500

**City Funding:** \$4,761,500

**Other Funding:** No other funding

### **Lone Star Ranch Wastewater Lift Station Capacity Improvements (CIP13-0010)**

**Project Manager:** Art Hartle

**Description:** Evaluation, design and construction of improvements to accommodate current growth in the service area.

**Status:** Design of Lift Station Improvements will begin in September 2014.

**Schedule:** Construction schedule has not been determined.

**Budget:** \$6,000,000

**City Funding:** \$6,000,000

**Other Funding:** No other funding

### **Northwest Water and Wastewater System Expansion (CIP07-0061)**

**Project Manager:** David L. Chacon

**Description:** Install looped waterline along FM 423 to US 380. Install wastewater collection main from Panther Creek WWTP north along FM 423 to approximately 3,000 feet south of US 380.

**Status:** Construction is approximately 60% complete.

**Schedule:** Construction is anticipated to be complete in Q1 (Jan-Mar) 2015.

**Budget:** \$3,853,160

**City Funding:** \$3,853,160

**Other Funding:** No other funding

### **Stewart Creek Wastewater Treatment Plant Expansion**

**Project Manager:** Paul Knippel

**Description:** Increase capacity from 5.0 million gallons per day (MGD) to 10.0 MGD. Project design and construction is being administered by North Texas Municipal Water District.

**Status:** Engineering design is underway and expected to be complete in Q4 (Oct-Dec) 2014.

**Schedule:** Construction is anticipated to begin in Q1 (Jan-Mar) 2015.

**Budget:** \$43,000,000

**City Funding:** \$43,000,000

**Other Funding:** No other funding

## Drainage Projects

**Creek Master Plans** - Comprehensive hydrologic and hydraulic studies are being performed on the city's five major watersheds. These studies will provide consistency and continuity to the city's floodplain modeling and mapping. They will facilitate the development process and provide a baseline for floodplain reclamation and mitigation efforts. Studies have been completed for Stewart Creek, Cottonwood Branch, Panther Creek Watershed, and West Rowlett Creek Watershed.

## Traffic & Transportation Highlights

**Development/CIP Plan Reviews** – Staff reviewed 101 sets of development plans this month.

**Bicycle-Friendly Community** – There is a committee that works towards Frisco being named a bicycle-friendly community by championing and prioritizing various development, infrastructure, and outreach policies and improvements. The Transportation Division has a seat on the committee, as do other departments as well as Frisco ISD and the bicycling community. A Transportation staff member also attends the quarterly meetings of the North Central Texas Council of Governments' Bicycle and Pedestrian Advisory Committee.

**Citizen Inquiries** – Staff has responded to several citizen inquiries that came into the department by telephone, email, and the Q&A Message Board on the City website.

**Miscellaneous Traffic Studies** – Staff continues to update the crash database (based on police reports). The database is used to identify problem areas that need to be addressed. Staff is currently working on developing a standard way of reporting crash statistics on a monthly and annual basis as well as integrating the crash database with the new automated police report system that has been implemented by the Police Department. Staff conducted several neighborhood traffic studies at the request of citizens.

**Rectangular Rapid Flashing Beacons** – A new type of crosswalk device has been given interim approval by the Federal Highway Administration. This device is expected to increase pedestrian safety at mid-block crosswalks. The Rectangular Rapid Flashing Beacon (RRFB) uses a pedestrian push button to activate a set of flashing yellow lights installed on warning signs. The flashing lights are intended to alert drivers to the presence of pedestrians and cause an increase in yield response by the drivers. Staff tested a RRFB in front of Cobb Middle School during the 2012-2013 school year and found an increased rate of yield response by drivers. A new traffic signal was installed at Cobb Middle School and so the RRFB was moved to Roach Middle School in September 2013. Staff is considering installing RRFBs at other mid-block locations as funding permits and in accordance with a prioritization process based on vehicle and pedestrian volumes.

**Roundabouts** – The City currently has eleven single-lane roundabouts in operation within several residential neighborhoods with several more under construction. Staff is reviewing design plans for the dual-lane roundabout at the intersection of Warren Parkway and Ohio Drive, which will be the first roundabout on one of our arterials. Construction is anticipated to begin in 2015. Two additional dual-lane roundabouts are planned for some new arterials that will be constructed by 2016. For more information, visit the Engineering Department's page on the City of Frisco website:

<http://www.friscotexas.gov/departments/engineering/traffic/Pages/ProposedRoundabouts.aspx>

**School Zones** – Staff meets monthly with representatives of FISD and the Police Department to discuss any school zone, crossing guard, or sidewalk issues. This month, staff observed traffic operations near five schools at the request of residents and met with school officials to discuss new crossing guard requests and campus circulation issues. Staff also coordinated with other FISD officials regarding the potential locations of several future school campuses and what transportation needs and impacts they would have.

**Special Events** – As part of the Special Events Review Committee, staff reviews all pending special event applications for any traffic control needs. Staff continually coordinates with the Police, Fire, Communications, and Public Works Departments regarding any special events that affect traffic flow or parking in the City. Staff also coordinates with Toyota Stadium and Dr Pepper Arena staff regarding large events at those venues, which sometimes requires coordination with NTTA. This month, staff provided traffic management support for the Fireball Run, the Color Me Green 5K, a few church festivals, a City-sponsored neighborhood clean-up, a FC Dallas soccer game, the preparations for the Safety Town Trick-or-Treat and the Gary Burns Fun Run.

**Training and Conference Attendance** – Staff attends the monthly local meetings of the Texas District of the Institute of Transportation Engineers (TexITE).

**Traffic Count Map** – The traffic count map is available on the City's website at <http://maps.friscotexas.gov/>. It provides daily traffic volume counts (and the date of each count) on multiple segments of every major roadway. Staff conducts an annual traffic count program which updates the volumes collected on each major roadway segment every two or three years.

**Traffic Control** – Each month, staff designs the installation of new and/or replacement signs and pavement markings as needed. Each month, staff reviews the traffic control plans for new and ongoing construction zones and sends announcements to all City services regarding road closures and traffic switches. Staff is coordinating with TxDOT regarding closures, detours and traffic switches along Main Street (FM 3537) during their widening project. This month, traffic was switched onto the new pavement of Main Street between Preston Road and Custer Road.

**Traffic Management Center** – The City's Emergency Operations Center (EOC) is used on a daily basis as our Traffic Management Center. The Center is staffed every weekday by Traffic personnel who monitor traffic conditions throughout the City using our network of traffic cameras (described below) and who can remotely modify the operations of the traffic signals or dispatch repair crews and/or coordinate with Fire and Police personnel. Traffic personnel are also in the Center during large special events and during emergency situations and bad weather events.

**Traffic Signal System Communications** – The system provides communications to all of the traffic signals in the City, allowing staff to monitor and control their operation remotely from our Traffic Management Center or from any City computer. Wireless communication relays are installed on four water towers and two communication towers, all of which have battery backup units. Staff can also view the traffic detection cameras at most of the traffic signals, as well as 85 pan-tilt-zoom (PTZ) traffic cameras that can be controlled remotely. City crews installed the newest PTZ camera this month at the intersection of Panther Creek Parkway & Grayhawk Boulevard.

**Traffic Signal Timing** – On an ongoing basis, staff monitors and changes the operation of various traffic signals in construction zones as needed. Travel times on the major corridors are also collected to ensure the coordination between traffic signals is optimized as traffic continues to increase in the area and traffic patterns change with new development. This month, staff adjusted the traffic signal timing along Main Street to account for the temporary road closure and the traffic switch onto the new pavement.

**Flashing Yellow Arrow** – The Flashing Yellow Arrow (FYA) left-turn display is a new federally mandated way of controlling the left-turn movement at traffic signals. Instead of a circular green indication, motorists will now be shown a flashing yellow arrow to indicate when they are permitted to turn left (after yielding to oncoming traffic). There are currently 52 intersections with FYA left-turn displays. All new traffic signals will be installed with FYA and approximately one existing intersection will be retrofitted each month. A website has been created to inform citizens about the FYA with a link to an instructional video at <http://friscotexas.gov/FYA>.

**Traffic Signal Maintenance** – The City of Frisco currently operates and maintains 99 traffic signals within the City of Frisco and one traffic signal on FM 423 outside the city limits, all but one of which have automatic battery backup power. City crews provide on-call maintenance seven days per week with a maximum 45-minute response time. This month, City crews activated the newest traffic signal at Panther Creek Parkway & Grayhawk Boulevard. City crews also responded to the truck crash that destroyed the entire span-wire traffic signal at the intersection of US 380 and northbound Preston Road on October 9. Crews were able to install and activate a new temporary traffic signal within 12 hours of the crash.

A significant part of traffic signal maintenance relates to the 397 video cameras and 23 SmartSensor radar units used to detect vehicles at each signal. Currently, 100% of the video is fully operational. Maintaining this video and radar detection is very efficient due to the citywide communication system because diagnosing and troubleshooting detection issues can be performed from our central control center.

Beyond responding to items that need to be constructed or repaired, city crews perform regular preventative maintenance on traffic signal equipment each month. This includes testing of each traffic signal's video detection cameras, "conflict monitor" equipment, and Opticom equipment (which provides emergency vehicle preemption of the traffic signal).

This month, City crews programmed and set in place our electronic message boards to direct traffic at a couple of church festivals and a City-sponsored neighborhood clean-up, and to notify residents of ground spraying for mosquitoes in several areas of the City.

City crews also operate and maintain 147 school zone flashers, two pedestrian crossing flashers, two warning sign flashers, and one set of pedestrian-activated flashing beacons (RRFB). City crews are in the process of upgrading the school zone flashers to have new cellular modems for remote communication, which replaces their current pager technology which has been discontinued. Twenty-one of the flashers have been upgraded so far and all of them are expected to be upgraded by the end of 2015.

**Roadway Lighting Maintenance** – In general, city crews operate and maintain roadway lighting along major thoroughfares and the power companies operate and maintain the street lights within neighborhoods. City crews performed lighting repairs at several locations during the month, including replacing bulbs and replacing poles that were knocked down.

Total light poles maintained by City	3,041
Total lamp fixtures maintained by City	5,338
Proportion of City lighting currently operating	99%

**Signs & Markings Maintenance** – City crews install and maintain traffic control signs and pavement markings on the public streets. This division tracks all signs in the public right-of-way that have been installed by developers and City crews and has an annual program to check the status of existing pavement markings. Signs and pavement markings are replaced when they become faded and/or damaged, or when growth and development requires changes to the traffic control strategy on a particular roadway. This division also fabricates all of the signs installed by City crews as well as fabricating all street name signs installed by developers in new subdivisions. During the past month, crews have installed new striping along Main Street and along Technology near Toyota Stadium. Crews have also started to perform the annual daytime inspection of signs across the city.